



Industrial Division

MAR 13 1990

**MATERIAL SAFETY DATA SHEET**

PRODUCT SOLUTION S0121 HTD-1 (BUFFER)

**Emergency Telephone Number****Medical (312) 920-1510 (24 hours)\***

\*Effective November 11, 1989, the area code will be changed to 708.

**SECTION 1 PRODUCT IDENTIFICATION**

TRADE NAME: SOLUTION S0121 HTD-1 (BUFFER)

DESCRIPTION: HTD-1, aqueous solution of monoethanolamine, monoethanolamine hydrochloride, and triethanolamine hydrochloride

NFPA 704M/HMIS RATING: 2/2 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER  
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme**SECTION 2 HAZARDOUS INGREDIENTS**

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX. %
Monoethanolamine	141-43-5	10-20

**SECTION 3 PRECAUTIONARY LABEL INFORMATION**

WARNING: May be irritating to eyes, nose and skin. Keep container tightly closed. Do not take internally.

**SECTION 4 FIRST AID INFORMATION**

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN: Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician at once.

INGESTION: Do not induce vomiting. Give water. Call a physician.

INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

**SECTION 5 HEALTH EFFECTS INFORMATION**

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: Can cause moderate to severe irritation.



# MATERIAL SAFETY DATA SHEET

PRODUCT SOLUTION S0121 HTD-1 (BUFFER)

Emergency Telephone Number

Medical (312) 920-1510 (24 hours)\*

*\*Effective November 11, 1989, the area code will be changed to 708.*

## SECTION 5 HEALTH EFFECTS INFORMATION

( CONTINUED )

SKIN CONTACT: Can cause moderate to severe irritation.  
INGESTION: Can be harmful.  
INHALATION: Can cause respiratory irritation.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

## SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but toxicity studies of the ingredient(s) in Section 2 have been reviewed. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):  
Monoethanolamine LD<sub>50</sub> = 2,100 mg/kg

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):  
COMMENTS: 500 mg of monoethanolamine produced moderate to severe irritation.

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):  
COMMENTS: 763 micrograms of monoethanolamine produced severe irritation.

## SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Colorless	FORM: Liquid	ODOR: Slight amine
SOLUBILITY IN WATER:	Completely	
pH (NEAT) =	10	ASTM E-70
FLASH POINT:	Greater than 200 Degrees F (PMCC)	ASTM D-93

NOTE: These physical properties are typical values for this product.

## SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: Greater than 200 Degrees F (PMCC) ASTM D-93

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NO<sub>x</sub> under fire conditions.



# MATERIAL SAFETY DATA SHEET

PRODUCT SOLUTION S0121 HTD-1 (BUFFER)

## Emergency Telephone Number

Medical (312) 920-1510 (24 hours)\*

\*Effective November 11, 1989, the area code will be changed to 708.

## SECTION 9 REACTIVITY INFORMATION

**INCOMPATIBILITY:** N-nitrosamines, many are cancer causing agents to laboratory animals, may be formed when certain amines are mixed with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations.

Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

**THERMAL DECOMPOSITION PRODUCTS:** In the event of combustion CO, CO<sub>2</sub>, NO<sub>x</sub> may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

## SECTION 10 PERSONAL PROTECTION EQUIPMENT

**RESPIRATORY PROTECTION:** Respiratory protection is not normally needed.

**VENTILATION:** General ventilation is recommended.

**PROTECTIVE EQUIPMENT:** Use gloves and safety glasses.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

## SECTION 11 SPILL AND DISPOSAL INFORMATION

**IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)**

### **SPILL CONTROL AND RECOVERY:**

**Small liquid spills:** Contain with absorbent material, such as clay, soil or any commercially available absorbent. Scoop reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

**DISPOSAL:** If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, (i.e. D001 through D017) nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified before disposal to a sanitary landfill. Can be incinerated in accordance with local, state and federal regulations.

Empty product container should be punctured, if plastic, and placed in the garbage collection container.



# MATERIAL SAFETY DATA SHEET

PRODUCT SOLUTION S0121 HTD-1 (BUFFER)

Emergency Telephone Number

**Medical (312) 920-1510 (24 hours)\***

*\*Effective November 11, 1989, the area code will be changed to 708.*

## SECTION 12 ENVIRONMENTAL INFORMATION

If released into the environment, see CERCLA in Section 14.

## SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - PRODUCT IS NOT REGULATED  
DURING TRANSPORTATION

## SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

### FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

Monoethanolamine - Irritant

Ethanolamine = TWA 3 ppm, STEL 6 ppm ACGIH/TLV  
8 mg/m<sup>3</sup>, 15 mg/m<sup>3</sup> ACGIH/TLV

Ethanolamine = TWA 3 ppm, STEL 6 ppm OSHA/PEL  
8 mg/m<sup>3</sup>, 15 mg/m<sup>3</sup> OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986  
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS  
(40 CFR 370):

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

- XX Immediate (acute) health hazard
- Delayed (chronic) health hazard
- Fire hazard
- Sudden release of pressure hazard



# MATERIAL SAFETY DATA SHEET

PRODUCT SOLUTION S0121 HTD-1 (BUFFER)

## Emergency Telephone Number

Medical (312) 920-1510 (24 hours)\*

\*Effective November 11, 1989, the area code will be changed to 708.

## SECTION 14 REGULATORY INFORMATION

( CONTINUED )

### -- Reactive hazard

Under Section 311, submittal of MSDS's or a list of product names to the local emergency planning commission, state emergency response commission and local fire department is required after October 17, 1987 if you have:

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

After October 17, 1989, MSDS(s), or a list of product names for all hazardous substances between zero (0) and 10,000 pounds, not previously reported, must be submitted.

### SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

### TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

### RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:

If this product becomes a waste, it does not meet the criteria of a hazardous waste.

### FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15

(formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):

None of the ingredients are specifically listed.

### CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:

This product contains the following ingredients covered by the Clean Air Act:

Monoethanolamine - Section 111

### STATE REGULATIONS:

#### CALIFORNIA PROPOSITION 65:

None of the chemicals on the current Proposition 65 list are known to be present in this product.

#### MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan



# MATERIAL SAFETY DATA SHEET

PRODUCT SOLUTION S0121 HTD-1 (BUFFER)

Emergency Telephone Number

Medical (312) 920-1510 (24 hours)\*

*\*Effective November 11, 1989, the area code will be changed to 708.*

## SECTION 14 REGULATORY INFORMATION

( CONTINUED )

Critical Materials Register.

### STATE RIGHT TO KNOW LAWS:

Regulated in those states using the TLV for monoethanolamine as a criteria for listing.

## SECTION 15 ADDITIONAL INFORMATION

None

## SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

## SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, Doull, J., Klaassen, C. D., and Admur, M. O., eds., Macmillian Publishing Company, Inc., N. Y., 2nd edition, 1980.

CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N. H., and Hughes, J. P., eds., J. P. Lipincott Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of



# MATERIAL SAFETY DATA SHEET

PRODUCT SOLUTION S0121 HTD-1 (BUFFER)

## Emergency Telephone Number

**Medical (312) 920-1510 (24 hours)\***

*\*Effective November 11, 1989, the area code will be changed to 708.*

## SECTION 17 BIBLIOGRAPHY

( CONTINUED )

Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist

DATE CHANGED: 05/19/89

DATE PRINTED: 03/02/90



# MATERIAL SAFETY DATA SHEET

PRODUCT

Emergency Telephone Number

**Medical (312) 920-1510 (24 hours)\***

*\*Effective November 11, 1989, the area code will be changed to 708.*